



**NOVA ELECTRIC**



#### **POPULAR OPTIONS**

- SNMP Communications
- Ruggedization Against Shock, Vibration, And Humidity
- MS Connector Mates
- Shock Mounts
- Floor Mount Feet
- Input Volt And Amp Meter Set
- Output Volt And Amp Meter Set
- Elapsed Time Meter
- Internal Transfer Switch
- High IP Protection Including Louvers On All Intake And Exhaust, As Well As Fully Gasketed Breakers, Switches, And Indicators.
- Custom Markings
- Environmental Stress Screening Services

#### **CONTACT**

100 School Street,  
Bergenfield, NJ 07621 USA

(201) 385-0500

[novaelectric.com](http://novaelectric.com)  
[info@novaelectric.com](mailto:info@novaelectric.com)

## **Galaxy Lightweight Series 270 VDC Nominal Pure Sine Wave Bulkhead Mount DC-AC Inverters**



### **These units are suitable for applications such as:**

- *Airborne Applications*
- *UAVs and Drones*
- *Military Vehicle Applications*
- *Tactical Systems*
- *Ground Support*
- *Naval Applications*
- *Mobile Systems*
- *Communications*

***The Leader In Rugged Power Conversion Technology Since 1966***

Rev A-October-18-2019



## NOVA ELECTRIC



### POPULAR OPTIONS

- SNMP Communications
- Ruggedization Against Shock, Vibration, And Humidity
- MS Connector Mates
- Shock Mounts
- Floor Mount Feet
- Input Volt And Amp Meter Set
- Output Volt And Amp Meter Set
- Elapsed Time Meter
- Internal Transfer Switch
- High IP Protection Including Louvers On All Intake And Exhaust, As Well As Fully Gasketed Breakers, Switches, And Indicators.
- Custom Markings
- Environmental Stress Screening Services

### CONTACT

100 School Street,  
Bergenfield, NJ 07621 USA

(201) 385-0500

novaelectric.com  
info@novaelectric.com

### GENERAL OVERVIEW

Nova's Lightweight Galaxy-Series DC-AC Inverters are high-reliability power sources specifically designed for demanding applications in high shock, vibration, humidity, and EMI environments in compliance to MIL-STD-461, MIL-S-901, MIL-STD-167, MIL-STD-810, MIL-STD-740, and DOD-STD-1399. These models utilize field-proven technology, offering maximum reliability for severe environment and high reliability applications such as:

- Military Applications: Including Submarine, HMMWV, UAV, Shipboard, Aircraft, Mobile Power Units, Shelters, Transportable Systems, Tactical Systems, Ground Support, and more.
- Heavy-Duty Industrial Applications
- Demanding Commercial Applications
- Communications Systems

### SPECIFICATIONS

#### Electrical

<b>INPUT VOLTAGE</b>	270 VDC Nominal, 180-355 VDC Operating Range (Other Ranges Available)
<b>OUTPUT VOLTAGE</b>	120, 208, or 230 VAC (Specify)
<b>FREQUENCY</b>	50 / 60 / 400 Hz. Available
<b>VOLTAGE REGULATION</b>	± 2% NL to FL
<b>FREQUENCY REGULATION</b>	± 0.5% NL to FL
<b>HARMONIC DISTORTION</b>	5% THD, 3% Typical
<b>INPUT POWER FACTOR</b>	0.95 or Better @ Half-Full Load
<b>EFFICIENCY AT FULL LOAD</b>	85% @ Full Load Typical
<b>CONNECTIONS</b>	MS Connector (Mates Opt.)

#### Alarms & Diagnostics

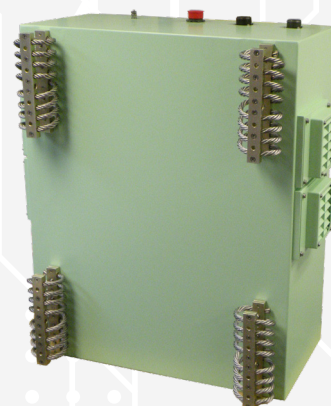
<b>SNMP V1.0</b>	CAT-5 Connector
<b>MAJOR ALARM</b>	Logic Fault, Overtemperature, Overload
<b>MINOR ALARM</b>	Utility Off
<b>RS 232 VIA DB9 CONNECTOR</b>	Available - Optional
<b>ALARM CONTACTS</b>	Available - Optional
<b>STATUS</b>	Red / Green
<b>INVERTER OFF</b>	Red
<b>LOGIC FAULT</b>	Red
<b>OVER TEMPERATURE</b>	Red
<b>LOAD ON UTILITY</b>	Red Optional with Transfer Switch

#### Environmental

<b>OPERATING TEMP.</b>	-20° to +55°C (Extended Ranges Optional)
<b>STORAGE TEMP. RANGE</b>	-40° to +71°C (Extended Ranges Optional)
<b>HUMIDITY</b>	to 95% RH Non-Condensing – Designed to meet MIL-STD-810 optionally. All boards conformal coated with Acrylic MIL-I-46058 Type R.
<b>ELEVATION</b>	Operating: 15,000 Ft. (4,572 m)  Non-Operating: 40,000 Ft. (12,192 m)
<b>SHOCK</b>	20g, 11 mS Half Sinewave Designed to meet MIL-STD-810
<b>AUDIBLE NOISE</b>	Less than 55 dbA at 5 ft.
<b>MTBF</b>	100,000+ Hours per Field Data @ +25C Ambient Ground-Fixed
<b>MTTR</b>	30 Minutes by Qualified Personnel

#### Protective Features

<b>OVERLOAD</b>
<b>THERMAL</b>
<b>INPUT UNDERVOLTAGE</b>
<b>INPUT OVERVOLTAGE PROTECTED</b>
<b>AC OUTPUT CIRCUIT BREAKER</b>
<b>AUDIBLE ALARM WITH FRONT PANEL MOUNTED SILENCE SWITCH</b>



Shock Mounts available optionally

**The Leader In Rugged Power Conversion Technology Since 1966**



## PARTIAL 60 Hz SINGLE PHASE OUTPUT MODEL SELECTION

MODEL	OUTPUT VAC	OUTPUT FREQ. (Hz)	CONT. OUTPUT POWER	WEIGHT (LB)	SIZE (HxWxL)
GLH2K60-270	120	60	2 KVA	150	30" x 24" x 12"
GLH3K60-270	120	60	3 KVA	150	30" x 24" x 12"
GLH4K60-270	120	60	4 KVA	150	30" x 24" x 12"
GLH5K60-270	120	60	5 KVA	150	30" x 24" x 12"

*\*Specifications subject to change without notice.*

## PARTIAL 50 Hz SINGLE PHASE OUTPUT MODEL SELECTION

MODEL	OUTPUT VAC	OUTPUT FREQ. (Hz)	CONT. OUTPUT POWER	WEIGHT (LB)	SIZE (HxWxL)
GLH2K50-270(220)	220	50	2 KVA	150	30" x 24" x 12"
GLH3K50-270(220)	220	50	3 KVA	150	30" x 24" x 12"
GLH4K50-270(220)	220	50	4 KVA	150	30" x 24" x 12"
GLH5K50-270(220)	220	50	5 KVA	150	30" x 24" x 12"

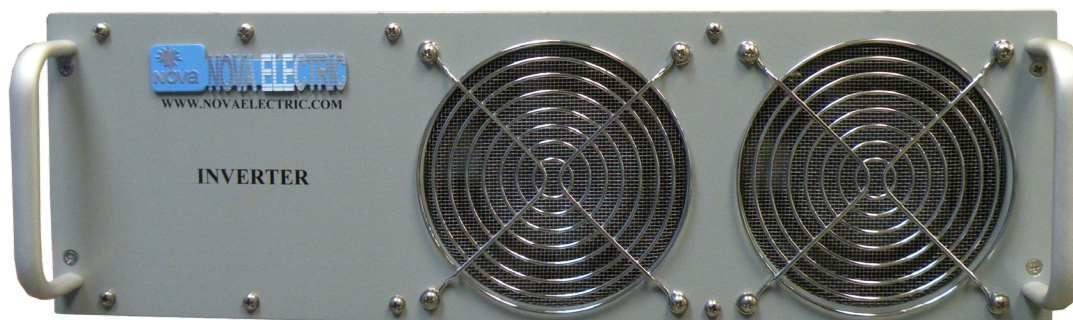
*\*Specifications subject to change without notice.*

## PARTIAL 400 Hz SINGLE PHASE OUTPUT MODEL SELECTION

MODEL	OUTPUT VAC	OUTPUT FREQ. (Hz)	CONT. OUTPUT POWER	WEIGHT (LB)	SIZE (HxWxL)
GLH2K400-270	115	400	2 KVA	150	30" x 24" x 12"
GLH3K400-270	115	400	3 KVA	150	30" x 24" x 12"
GLH4K400-270	115	400	4 KVA	150	30" x 24" x 12"
GLH5K400-270	115	400	5 KVA	150	30" x 24" x 12"

*\*Specifications subject to change without notice.*

**ALL MODELS HEREIN ALSO AVAILABLE IN 5.25"H X 19"W X 24"D RACK MOUNT CHASSIS --  
CONSULT FACTORY FOR DETAILS.**



*Typical Front View – 19" Rack Mount Chassis Configuration*



*Typical Rear View – 19" Rack Mount Chassis Configuration*



## SYSTEM COMPLIANCE

**MIL-STD-740-1:** Airborne Sound Measurements for Shipboard Equipment

**MIL-STD-740-2:** Structureborne Vibratory Acceleration Measurements

**Additional Ruggedization to meet MIL-S-901, MIL-STD-167, MIL-STD-810, and DOD-STD-1399:** The UPS System's construction is extremely robust, and ruggedized throughout. All components and modules within the unit are mounted using additional steel brackets and heavy-duty stainless-steel hardware, which is then further secured using Loctite and RTV where required. All boards are conformal-coated (Acrylic MIL-I-46058 Type R) for maximum resistance to potential condensation and fungus growth.

**MIL-S-901D** for Grade A, Class II, Type B Equipment (mounted in shock-isolated rack attenuating to 20g/11ms max)

**MIL-STD-167-1** for Type I Equipment

### **MIL-STD-810:**

- Air Temperature per MIL-STD-810F Method 502.4, Procedure II
- Steady State Temperature per MIL-STD-810F, Method 501.4, Procedure I (Constant Temperature) and Method 502.4, Procedure I
- Temperature Shock per MIL-STD-810F, Method 503.4, Procedure II, Cyclic.
- Thermal Shock testing per MIL-STD-810G, Method 503.5, Procedure I-D
- Operating Temperature Shock per MIL-STD-810B Method 503 0 to 71°C
- High Temperature Storage per MIL-STD-810G, Method 501.5, Procedure I
- Low Temperature Storage testing per MIL-STD-810G, Method 502.5, Procedure I
- High Temperature Operating per MIL-STD-810G, Method 501.5, Procedure II
- Low Temperature Operating per MIL-STD-810G, Method 502.5, Procedure II
- Operational Humidity per MIL-STD-810F Method 507.4.
- Humidity per MIL-STD-810G, Method 507.5, Procedure I
- Storage and Transportation Humidity per MIL-STD-810F, Method 507.4
- Salt Fog Atmosphere per MIL-STD-810F Method 509.4
- Altitude per MIL-STD-810F, Method 500.4, Procedure I, Storage/Air Transport.
- Operating and Non-Operating Altitude Testing per MIL-STD-810G, Method 500.5, Procedure II
- Rapid Decompression per MIL-STD-810F, Method 500.4, Procedure III
- Transit Shock per MIL-STD-810F, Method 516, Procedures IV, V and VI

- Transportation Vibration per MIL-STD-810F, Method 514.5, Procedure II for loose cargo transportation
- Transportation Vibration per MIL-STD-810G, Method 514-6, Procedure I, Category 20
- Vibration per MIL-STD-810B Method 514.6, Category 12, Procedure I
- Transit Drop per MIL-STD-810F, Method 516.5, Procedure IV
- Transit Drop per MIL-STD-810G, Method 516.6, Procedure IV
- Bench Handling per MIL-STD-810F, Method 516.5, Procedure VI
- Bench Handling per MIL-STD-810G, Method 516.6, Procedure VI

**DOD-STD-1399** Section 301A Table V – Design Limits for Ship Motion

**Internal EMI Reduction Package to meet MIL-STD-461:** The design of this unit is specifically focused on reducing EMI emissions. The UPS contains substantial internal filtering to minimize EMI emissions. Inputs which may be susceptible to transients are protected by several methods. The compact rack mount chassis is specifically treated with low surface resistivity finishes on the interior. All aluminum parts are treated with clear irridite. The steel parts are treated with zinc plate, followed by a clear chromate. Paint method via ANSI-61 gray is designed to assure excellent bonding of mating sheet metal parts. All input and output ventilation filters include metal honeycomb-style or mesh filters.

**MIL-STD-461E:** CE101, CE102, CS101, CS114, CS116, RE102, RS101, and RS103.

### **OPTIONAL Compliance to RTCA/DO-160G:**

**Rapid Decompression:** Section 4 Cabin Pressure (8K) to Max Operating Alt (35K) in 15 sec; Hold for 10 min

**Crash Safety Sustained:** Section 7, Cat B – Up = 3.0g – Down = 6.0g – Fwd = 9.0g – Aft = 1.5g – Side = 4.0g

**Explosive Atmosphere:** Non-Ignition Test Sec. 9.6.2, Cat E

**Humidity:** Section 6, paragraph 6.3.1 (Category A)

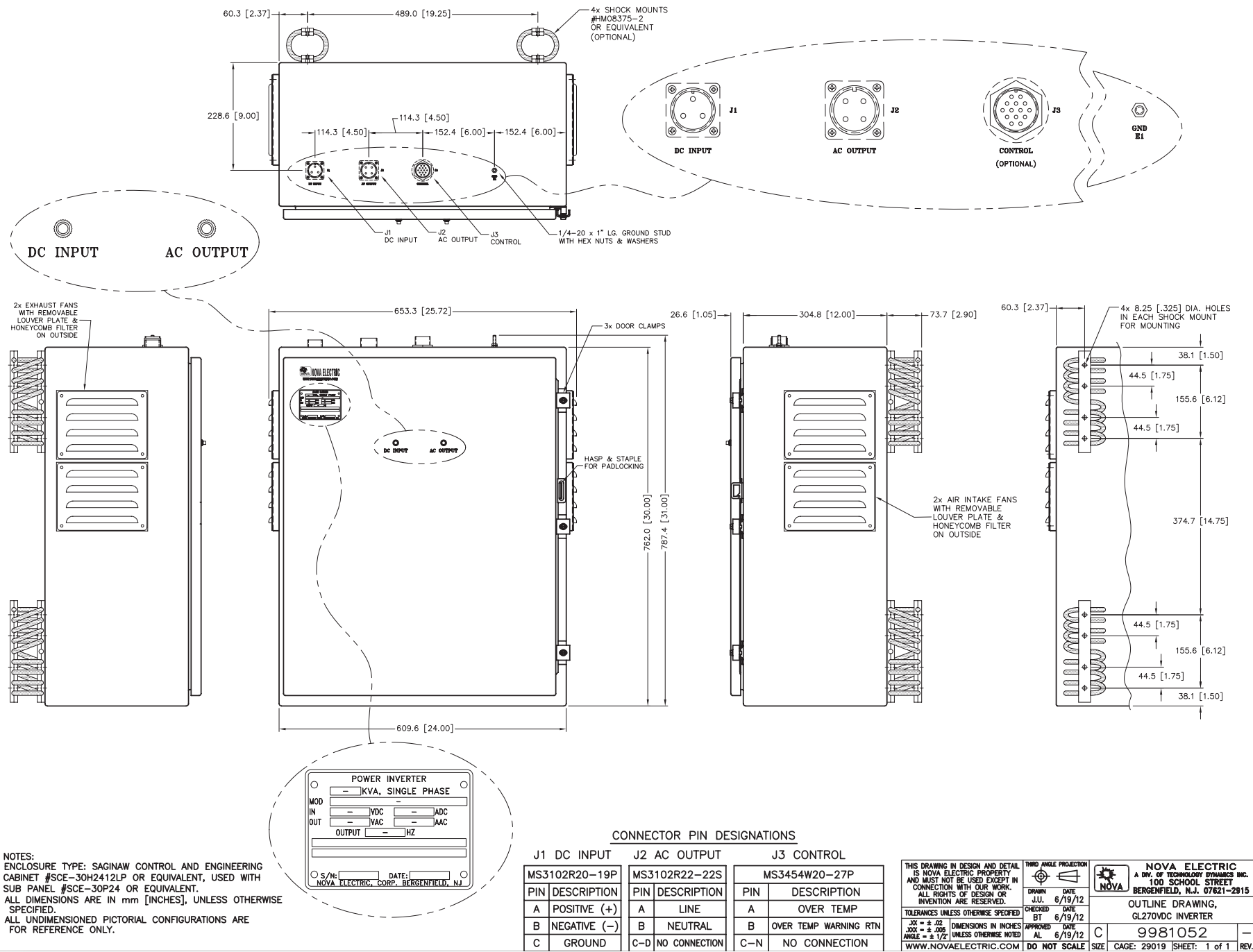
**Random Vibration Testing:** Section 8 (Category R, Fixed-Wing), paragraph 8.7.2, Figure 8-1: Aircraft Type 2, Test Category S, Zone 2, Curve B

**Operational Shock Testing:** Section 7 (Category B), paragraph 7.2, Standard operational, Peak value 6 g, Nominal duration 11 ms.

**Certain models above have been tested and qualified to the above specifications. Consult the factory for details.**



GALAXY LIGHTWEIGHT SERIES 270 VDC NOMINAL INPUT PURE SINE WAVE DC-AC INVERTERS - BULKHEAD CABINET OUTLINE DRAWING



- NOTES:
1. ENCLOSURE TYPE: SAGINAW CONTROL AND ENGINEERING CABINET #SCE-30H2412LP OR EQUIVALENT, USED WITH SUB PANEL #SCE-30P24 OR EQUIVALENT.
  2. ALL DIMENSIONS ARE IN mm [INCHES], UNLESS OTHERWISE SPECIFIED.
  3. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.







# RUGGED AC POWER SYSTEMS

**SELECT UNITS QUALIFIED TO MIL-STD-810, MIL-S-901, MIL-STD-1399, MIL-STD-461, MIL-STD-167, MIL-STD-740, RTCA/DO-160, AND MORE**

## RUGGED TRUE ONLINE FREQUENCY CON-



500 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

*50, 60, and 400 Hz.*

## PURE SINEWAVE DC-AC INVERTERS



100 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

*50, 60, and 400 Hz.*

## SOLID-STATE FREQUENCY CONVERTERS



100 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

*50, 60, and 400 Hz.*

## POWER DISTRIBUTION UNITS (PDUs)



*Basic, Switched, Auto-Transfer Switching, and Metered Configurations*

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## CUSTOM EMI FILTERS



*For MIL-STD-461 Compliance*

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## RUGGED PORTABLE TRANSFORMERS



100 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## EXTERNAL MAINTENANCE BYPASS SWITCHES (MBSSs)



*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## CUSTOM DESIGNS



*Designed & Built to Spec*

*Integrated AC & DC Capabilities*

*Multiple Outputs*

## RELIABLE AC POWER WHEN AND WHERE YOU NEED IT SEVERE ENVIRONMENT PRODUCTS



- AIRBORNE
- SHIPBOARD
- MOBILE
- RACK MOUNT & FREESTANDING

- 50, 60, AND 400 Hz
- AIR & WATER COOLED
- SINGLE AND THREE PHASE
- LIGHTWEIGHT DESIGNS

